ABSTRACT

An apparatus (10) for supplying regulated voltage d.c. electrical power to an LED array (12) includes a rectifier (32) responsive to a.c. power for generating rectified d.c. power and a power factor correcting and voltage regulating buck/boost switchmode converter (38) responsive to the rectified d.c. power for generating regulated voltage d.c. power to illuminate the LED array (12). A battery backup system (62) receives the a.c. power applied to the rectifier (32) for charging a rechargeable battery (66) and sensing an a.c. power failure. A switch-over relay (82) is connected between the battery backup system (62) and the rectifier. Upon sensing a failure of the a.c. power, the battery backup system (62) controls the switch-over relay (82) to connect the battery backup system (62) to the rectifier (32) to provide d.c. power to the switchmode converter (38) to illuminate the LED array (12). A half wave power detector (88) causes the apparatus (10) to reduce regulated d.c. power to dim the LED array (12).